

AMENDMENTS TO THE SPECIFICATION:

Page 1, replace the paragraph, beginning on line 14, with the following amended paragraph:

--Peptides from tumors and viruses are also attractive molecules in stimulating or ~~eliciting~~ eliciting a cell defense involving cytotoxic T lymphocytes against tumor and viruses after presentation by antigen presenting cells (APCs) such as ~~dendritic~~ dendritic cells, macrophages and B cells.--

Page 2, replace the paragraph, beginning on line 5, with the following amended paragraph:

--In French Patent ~~[[n°]]~~ No. 9613990 and PCT/FR97/02022, it has been shown that histidylated polylysine complexed with a nucleic acid is a system for cell transfection. The nucleic acid has a  $10^6$  to  $10^8$  ~~[[of]]~~ molecular weight. Polylysine is substituted at a level of at least 10%, advantageously from 15% to 35%, with molecules inducing membrane destabilization at acidic pH (mainly histidyl residues), and polylysine has a degree of polymerization of 15 to 900, particularly 200.--

Page 2, replace the paragraph, beginning on line 14, with the following amended paragraph:

--One aim of the invention is to provide new ~~positively~~ positively charged oligomeric conjugates enabling the

transmembrane passage of water soluble oligomers such as oligonucleotides, peptides and oligosides into the cytosol.--

Page 2, replace the paragraph, beginning on line 17, with the following amended paragraph:

--~~An other~~ Another aim of the invention is to provide new oligomeric conjugates of substituted oligolysine liable to allow the transfer of oligonucleotides, peptides and oligosides into cells.--

Page 2, replace the paragraph, beginning on line 24, with the following amended paragraph:

--Another advantage of the invention is that, although it is not excluded, the transfer of oligoanions such as oligonucleotides, anionic peptides, anionic oligosides (i.e. sulphated, phosphorylated, succinylated or ~~sialylated~~ sialylated oligosides) or a mixture thereof, does not require the formation of electrostatic complexes with the new positively charged oligomeric conjugates.--

Page 2, replace the paragraph, beginning on line 31, with the following amended paragraph:

--Another aim of the invention is to provide defined ~~oligmeric~~ oligomeric compounds in which the nature of the monomeric compounds can be different from each other.--

Page 6, replace the paragraph, beginning on line 6, with the following amended paragraph:

--Transfer of the above-mentioned biomolecules into the cytosol and/or the cell nucleus, requires that both the oligomeric conjugate leading to the membrane destabilization and the above-mentioned biomolecules are present in the [[said]] medium.--

Page 13, replace line 17 as follows:

--\*R represents in a ratio of 0% to 50% (corresponding to f:  $0 < f \leq 1$   $0 < f \leq u$ ).--

Page 17, replace line 2 as follows:

--i = 19      n = 4    [[(1)]](u)R= NH-CO-(CH<sub>2</sub>)n'-CH-(CH<sub>2</sub>)n''-R'  

|  
(CH<sub>2</sub>)m  
|  
B--

Page 25, replace the paragraph, beginning on line 4, with the following amended paragraph:

--The transfer of an antisense oligonucleotide in the cytosol where it binds to the complementary mRNA sequence and blocks its ~~translation~~ transduction leading to inhibition of the synthesis of the gene product, can be carried out as described hereafter in the legends of Figures 1, 2 and 3.--

Page 28, replace the paragraph, beginning on line 8, with the following amended paragraph:

--In vitro evaluation of antigen presentation can be illustrated by the following:

~~Dendritic~~ Dendritic cells were incubated for 4 h at 37°C with the nonadecapeptide (185-203) from the C-terminal part of the HIV-1 Nef protein containing the nonapeptide (190-198) (AFHHVAREL) in the absence or in the presence of an histidylated oligolysine. Cells are washed and further incubated for 24 h at 37°C in the absence of peptide and histidylated oligolysine. MHC class I presentation of peptide antigen was evaluated by Cr<sup>51</sup> cytotoxic assay by using a CTL clone sensible to the peptide. DCs were labelled with Cr<sup>51</sup> (target cells:T) and then incubated at 37°C for 4 h in the presence of the CTL clone (effector cells:E) at E/T ratios ranged from 1 to 100. The supernatants are collected and the radioactivity in the supernatant was recorded. The % of specific Cr<sup>51</sup> release is calculated according to  $(A_{NS} - A_S)/A_{NS} \times 100$  where A<sub>NS</sub> and A<sub>S</sub> are the radioactivity in supernatant dilutions of ~~dendritic~~ dendritic cells incubated in the absence and the presence of CTL cells, respectively.--

Page 29, replace the paragraph, beginning on line 17, with the following amended paragraph:

--An oligoanion with silicated saccharidic components complexed according to the invention is transported into the cytoplasm of human cells where it binds to intracellular cofactors or second messengers such as NF kappa B. This binding causes nuclear transfer of the cofactor which derepress or stimulates genes coding for cytokines (such as IL1, TNF- $\alpha$ , and

Application No. 09/857,448  
Amdt. Dated October 15, 2003  
Reply to Office Action of July 15, 2003  
Docket No. 0508-1073

IL-12) .--

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. (currently amended) An oligomeric conjugate positively charged, comprising:

an oligomer with a polymerization degree (PD) from 5 to 36, ~~formed from monomeric components having free  $\text{NH}_3^+$  in a number equal~~ formed from monomeric components having initially free  $\text{NH}_3^+$  in a number equal to or higher than 50 % of the polymerization degree, wherein

a) the free  $\text{NH}_3^+$  of said monomeric components are substituted in a ratio of at least 50 %, said ratio being determined by nuclear magnetic resonance, by protonable residues, said residues being protonated in a weak acid medium, said protonation leading to a destabilization of a cellular membrane,

b) said protonable residues possess the following properties:

said protonable residues contain a functional group enabling them to be linked to said oligomer,

said protonable residues are not recognized as a recognition signal recognized by a cellular membrane receptor,

said protonable residues comprise at least one free  $\text{NH}_3^+$  group,

c) the free  $\text{NH}_3^+$  of said monomers can be also substituted by uncharged residues leading to a reduction of the number of positive charges in comparison to the same oligomer before substitution,

d) molecules constituting a recognition signal recognized by a membrane cellular receptor may be present:

by substitution of some of the free  $\text{NH}_3^+$  of said monomers,

on some of the uncharged residues leading to a reduction of the number of charges,

on some of said protonable residues leading to a destabilization of a cellular membrane, or

by substitution of the free  $\text{NH}_3^+$  (if it is present) of said protonable residues leading to a destabilization of a cellular membrane,  
provided that:

1) the total number of the non-substituted  $\text{NH}_3^+$  functions is of at least 50 % of the polymerization degree,

2) the number of monomers initially carrying free  $\text{NH}_3^+$  is substituted in a ratio of at least 50 % of the polymerization degree by residues leading to a destabilization of the cellular membrane.

2. (currently amended) The oligomeric conjugate according to claim 1, wherein the protonable residues leading to a destabilization of cellular membranes ~~wherein said protonable residues~~ have a pK in aqueous medium lower than 8.0.

3. (previously presented) The oligomeric conjugate complex according to claim 1, wherein said protonable residues are compounds selected from the group consisting of:

imidazoles,  
quinolines,  
pterines, and  
pyridines.

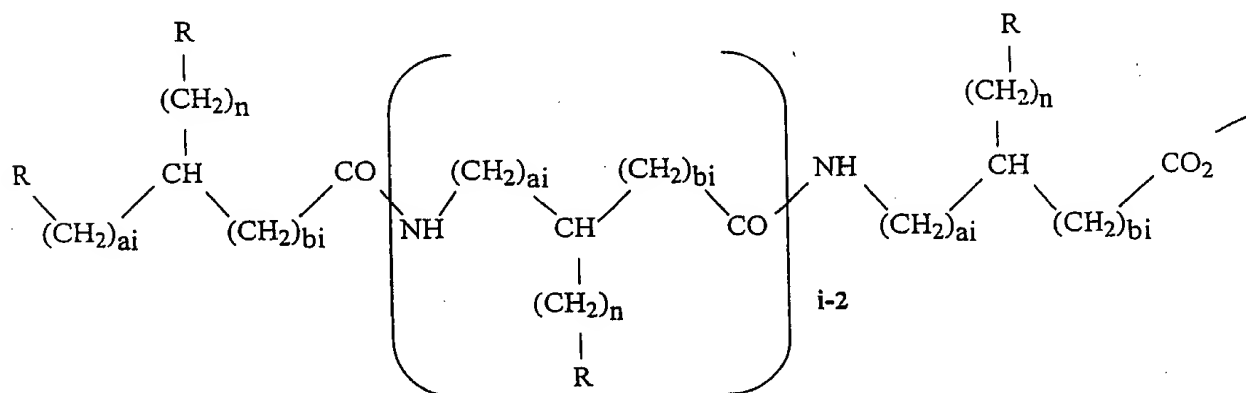
4. (previously presented) The oligomeric conjugate according to claim 1, wherein said protonable residues comprise alkyylimidazoles in which the alkyl radical has from 1 to 10 carbon atoms, and only one nitrogen atom of the imidazole ring is substituted.

5. (previously presented) The oligomeric conjugate according to claim 1, wherein the protonable residues leading to a destabilization of cellular membranes are selected from the group consisting of histidine, 4-carboxymethyl-imidazole, 3-(1-methyl-imidazol-4yl)-alanine, 3-(3-methyl-imidazol-4yl)-alanine, 2-carboxy-imidazole, histamine, 3-(imidazol-4yl)-L-lactic acid, 2-(1-methyl-imidazol-4yl)ethylamine, 2-(3-methyl-imidazol-4yl)ethylamine,  $\beta$ -alanyl-histidine-(carnosine), 7-



chloro-4(amino-1-methylbutylamino)-quinoline, N4-(7-chloro-4-quinolinyl)-1,4-pentanediamine, 8-(4-amino-1-methylbutylamino)-6-methoxy-quinoline (primaquine), N4-(6-methoxy-8-quinolinyl)1,4-pentanediamine, quininic acid, quinoline carboxylic acid, pteric acid, nicotinic acid, and quinolinic acid.

6. (currently amended) The oligomeric conjugate according to claim 1, wherein the oligomeric conjugate contains an oligomer of the following formula:



~~Wherein~~ wherein:  $ai$  ~~[[is]]~~ = an integer varying from 0 to 10,

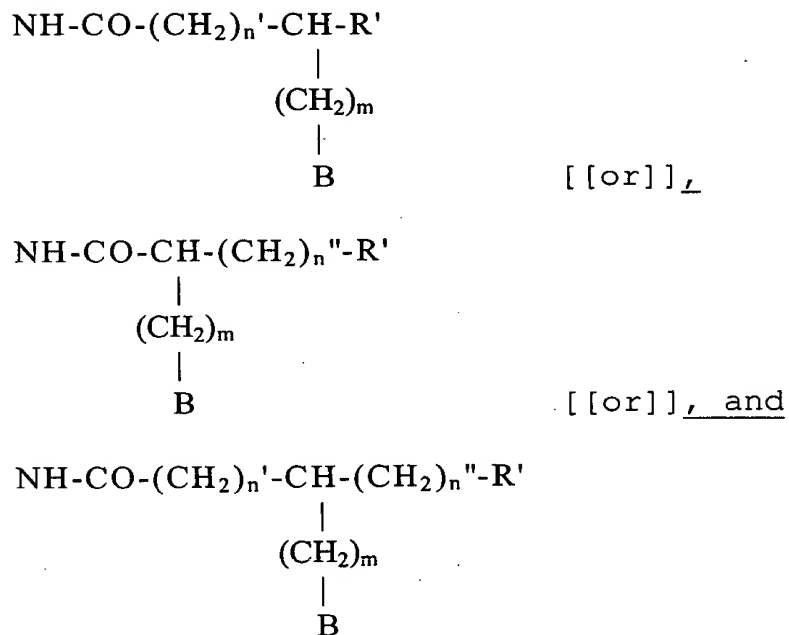
$bi$  ~~[[is]]~~ = an integer varying from 0 to 10,

$i$  = degree of polymerization from 5 to 36,

$n$  = ~~[[is]]~~ an integer varying from 1 to 6,

~~R represents in a ratio of 50 % to 100 %~~

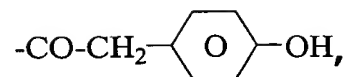
~~(corresponding to a number u)~~ wherein 50% to 100% of all R groups are selected from the group consisting of



wherein  $m$   $[[\text{is}]] \equiv$  an integer varying from 1 to 6,  
 $n'$   $[[\text{is}]] \equiv$  an integer varying from 0 to 6,  
 $n''$   $[[\text{is}]] \equiv$  an integer varying from 0 to 6,  
 $B$   $[[\text{is}]] \equiv$  a weak base,  
 $R'$  represents  $\text{NH}_3^+$  (corresponding to a number  $p$ )  $[[\text{,}]]$ ;

or NH (corresponding to a number  $q$ ) substituted  
by a structure selected from the group consisting of

- CO-CH<sub>3</sub>  $\underline{\hspace{1cm}}$
- CO-(CHOH) <sub>$r$</sub> H  $r$  being an integer from 1 to 15, and ~~preferably 1 to 7~~
- CO-(CH<sub>2</sub>) <sub>$s$</sub> -(CHOH) <sub>$r$</sub> H  $r$  being an integer from 1 to 15, and  $s$  being an integer from 1 to 6,



$\text{-SO}_2\text{-Flu,}$

$\text{-CO-Flu, and}$

$\text{-CS-NH-Flu}$

~~Flu being~~ wherein Flu is a fluorescent molecule; and  
wherein

~~\* R represents in a ratio of 0 % to 50 % of~~  
all R groups (corresponding to f[[:] ] wherein: 0 < f ≤  
u) are

$\text{NH}_3^+$  (corresponding to a number j)[[ , ]]; or

NH (corresponding to a number k), substituted by  
a structure selected from the group consisting of

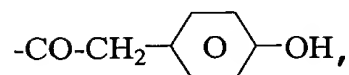
$\text{-CO-CH}_3,$

$\text{-CO-(CHOH)}_r\text{H}$

r being an integer from  
1 to 15,

$\text{-CO-(CH}_2)_s\text{-(CHOH)}_r\text{H}$

r being an integer from  
1 to 15, and s being an  
integer from 1 to 6,



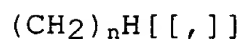
$\text{-SO}_2\text{-Flu,}$

$\text{-CO-Flu, and}$

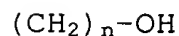
$\text{-CS-NH-Flu}$  wherein

~~Flu being~~ is a fluorescent molecule; or

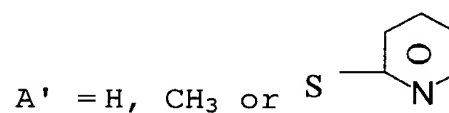
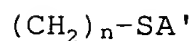
H (corresponding to a number h); or



n being an integer from  
1 to 6 (corresponding  
to a number h); or



n being an integer from  
1 to 6 (corresponding to  
a number h); or



n being integer from 1  
to 6 (corresponding to a  
number h)

with  $i = u + j + k + h$

total number of  $\alpha \text{ NH}_3^+ = p = u - q$

total number of  $\omega \text{ NH}_3^+ = j = f - (k + h)$

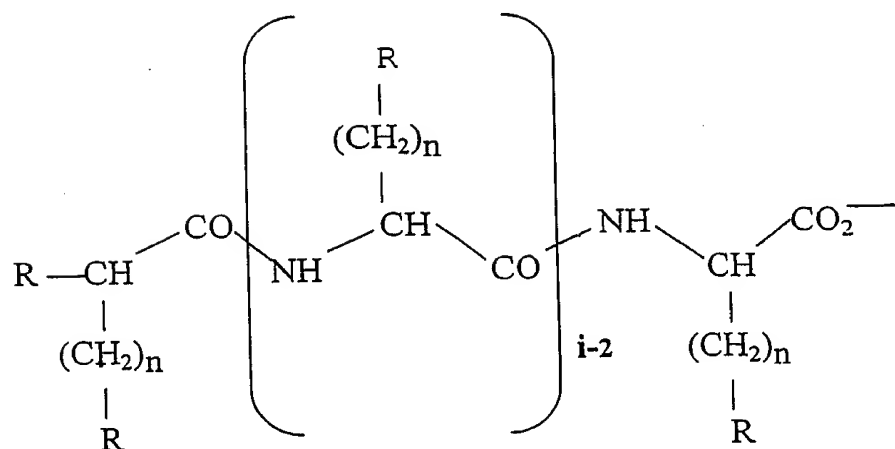
total number of  $\text{NH}_3^+ = m = p + j + 1$

with the proviso that:

1)  $u \geq i/2$

2)  $m \geq i/2$

7. (currently amended) The oligomeric conjugate according to claim 1, wherein the oligomeric conjugate contains an oligomer of the following formula:

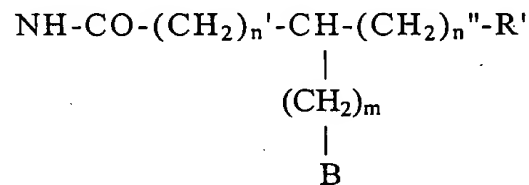
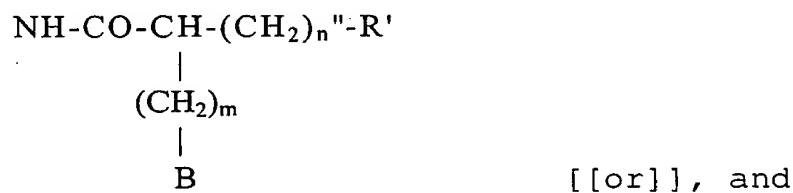
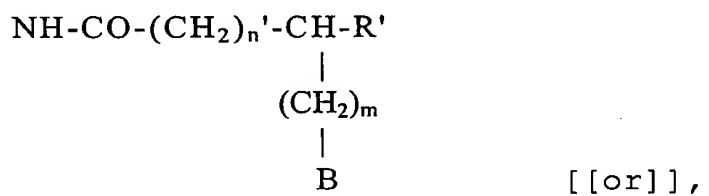


wherein

[[\*]] i = degree of polymerization from 5 to 36,

[[\*]] n = is an integer varying from 1 to 6,

[[\*]] R ~~represents in a ratio of~~ wherein 50 % to 100 % of all R groups (corresponding to u) are selected from the group consisting of



m [[is]] = an integer varying from 1 to 6,

n' [[is]] = an integer varying from 0 to 6,

n'' [[is]] = an integer varying from 0 to 6,

B [[is]] = a weak base,

R' represents  $\text{NH}_3^+$  (corresponding to a number p) [[,]];

or NH (corresponding to a number q) substituted by a

structure selected from the group consisting of


-CO-CH<sub>3</sub>,

-CO-(CHOH)<sub>r</sub>H

r being an integer from  
1 to 15,

-CO-(CH<sub>2</sub>)<sub>s</sub>-(CHOH)<sub>r</sub>H

r being an integer from  
1 to 15, and s being  
an integer from 1 to  
6,

-CO-CH<sub>2</sub>--OH,

-SO<sub>2</sub>-Flu,

-CO-Flu, and

-CS-NH-Flu wherein

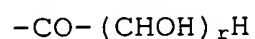
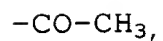
Flu being is a fluorescent molecule;

~~\* R represents in a ratio of and wherein~~ 0 % to  
50 % of all R groups (corresponding to f: 0 < f ≤ [[1]]  
u) are

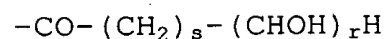
$\text{NH}_3^+$  (corresponding to a number j) [[,]]; or

NH (corresponding to a number k), substituted by

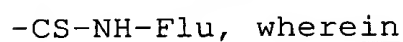
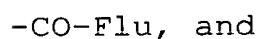
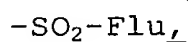
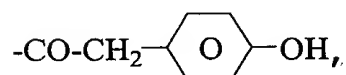
a structure selected from the group consisting of



r being an integer from 1  
to 15,

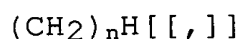


r being an integer from 1  
to 15, and s being an  
integer from 1 to 6,

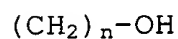


wherein  
Flu is a fluorescent molecule; or

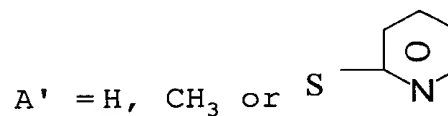
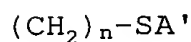
H (corresponding to a number h); or



n being an integer from  
1 to 6 (corresponding  
to a number h); or



n being an integer from  
1 to 6 (corresponding to  
a number h); or



n being integer from 1  
to 6 (corresponding to a  
number h)

with  $i = u + j + k + h$

total number of  $\alpha \text{NH}_3^+ = p = u - q$

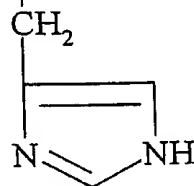
17



$$j = 7_L$$

[[or]]

$$i = 19 \quad n = 4 \quad (u) \quad R = \text{NH-CO-CH-NH}_3^+$$



corresponding to the formula  $R = \text{NH-CO-(CH}_2\text{)}_{n'}\text{-CH-(CH}_2\text{)}_{n''}\text{-R}'$

$\begin{array}{c} | \\ (\text{CH}_2)_m \\ | \\ \text{B} \end{array}$

wherein

$$n' = n'' = 0$$

$$R' = \text{NH}_3^+$$

$$m = 1$$

B = imidazole

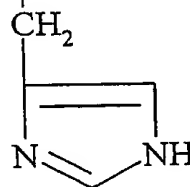
$$(f) \quad R = \text{NH}_3^+$$

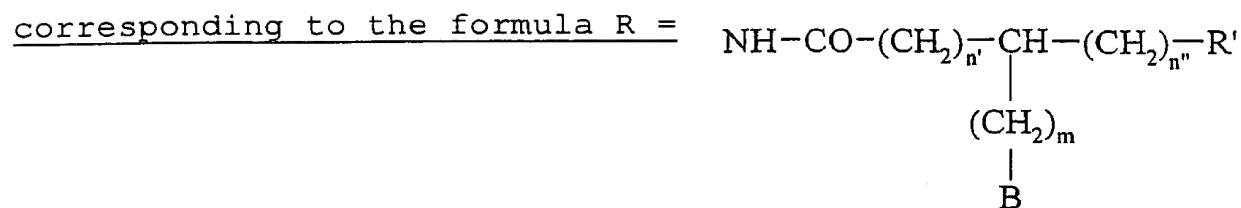
$$u = 16$$

$$j = 3_L$$

or

$$i = 19 \quad n = 4 \quad (u) \quad R = \text{NH-CO-CH-NH}_3^+$$





wherein

$$n' = n'' = 0$$

$$\text{R}' = \text{NH}_3^+$$

$$m = 1$$

$$\text{B} = \text{imidazole}$$

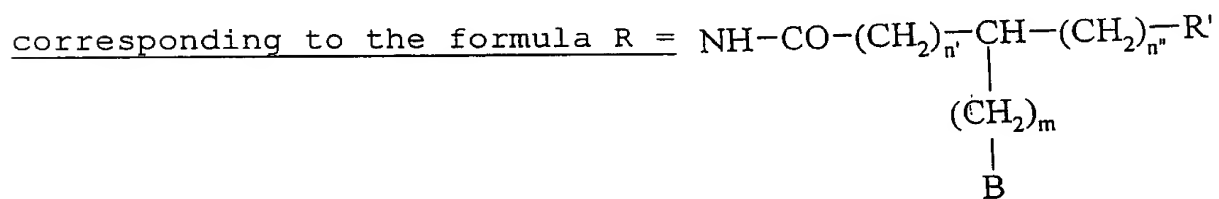
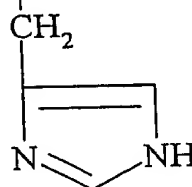
$$\text{(f) R} = \text{NH}_3^+$$

$$u = 19$$

$$j = 0$$

[[or]]

$$i = 19 \quad n = 4 \quad \text{(u) R} = \text{NH-CO-CH-NH}_3^+$$



wherein

$$n' = n'' = 0$$

$$R' = \text{NH}_3^+$$

$$m = 1$$

$$B = \text{imidazole}$$

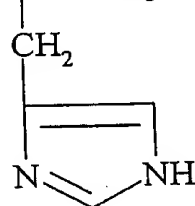
$$(f) R = \text{CO-CH}_3$$

$$u = 11$$

$$k = 8$$

[[or]]

$$i = 19 \quad n = 4 \quad (u) \quad R = \text{NH-CO-CH-NH}_3^+$$



corresponding to the formula  $R = \text{NH-CO-(CH}_2\text{)}_{n'}\text{-CH-(CH}_2\text{)}_{n''}\text{-R'}$

$$\begin{array}{c} | \\ (\text{CH}_2)_m \\ | \\ B \end{array}$$

wherein

$$n' = n'' = 0$$

$$R' = \text{NH}_3^+$$

$$m = 1$$

$$B = \text{imidazole}$$

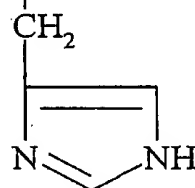
$$(f) R = \text{CO-CH}_3$$

$$u = 15$$

$$k = 4_{\underline{L}}$$

[[or]]

$$i = 19 \quad n = 4 \quad (u) \quad R = \text{NH-CO-CH-NH}_3^+$$



corresponding to the formula  $R = \text{NH-CO-(CH}_2\text{)}_{n'}\text{-CH-(CH}_2\text{)}_{n''}\text{-R}'$

$$\begin{array}{c} | \\ \text{(CH}_2\text{)}_m \\ | \\ \text{B} \end{array}$$

wherein

$$n' = n'' = 0$$

$$R' = \text{NH}_3^+$$

$$m = 1$$

$$B = \text{imidazole}$$

$$(f) \quad R = \text{CO-(CHOH)}_r\text{H}$$

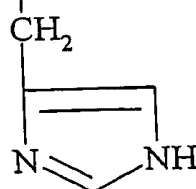
$$r = 5$$

$$u = 12$$

$$k = 3_{\underline{L}}$$

[[or]] and

$$i = 19 \quad n = 4 \quad (u) \quad R = \text{NH-CO-CH-NH}_3^+$$



corresponding to the formula  $R = \text{NH-CO-(CH}_2\text{)}_{n'}\text{-CH-(CH}_2\text{)}_{n''}\text{-R'}$   
 $\begin{array}{c} | \\ (\text{CH}_2)_m \\ | \\ \text{B} \end{array}$

wherein

(q)  $n' = n'' = 0$

$R' = \text{NH-CO-CH}_3$

$m = 1$

$B = \text{imidazole}$

(f)  $R = \text{NH}_3^+$

$u = 16$

$f = 4$

$k = 3$

9. (currently amended) A composition comprising an oligomeric conjugate according to claim 8, in association with ~~at least one biological molecule, selected from the group consisting of a peptide, an oligoside, an oligonucleotide, and a mixture thereof.~~

10. (currently amended) A combined preparation, in the form of a kit-of-parts, comprising:

a) an oligomeric conjugate according to claim 1, and

b) ~~a biological molecule, selected from the group consisting of a peptide, an oligoside, an oligonucleotide, and a mixture thereof,~~

for the simultaneous, separate or sequential use, for the *in vitro*, *in vivo*, or *ex vivo* transfer of said biological molecules into a cytosol and/or cell nucleus.

11. (currently amended) A method for the *in vitro*, *ex vivo*, or *in vivo* intracellular transfer of ~~biological molecules~~ oligonucleotides into a cytosol and/or in a cell nucleus of a cell, comprising:

treating said cell with an oligomeric conjugate according to claim 1 in association with ~~a biological material~~ an oligonucleotide.

12. (currently amended) A method for the *in vitro*, *ex vivo*, or *in vivo* transfer of ~~a peptide, an oligoside or an oligonucleotide, or a mixture thereof~~ an oligonucleotide, into a cytosol and/or a cell nucleus of a cell, comprising:

treating said cell with an oligomeric conjugate according to claim 1 in association with said ~~peptide, oligoside, oligonucleotide and mixture thereof.~~

13. (previously presented) The method according to claim 11, wherein the cells are selected from the group consisting of muscular, epithelial, endothelial, and myeloid cells.

14. (currently amended) A method for the *in vivo*, *in vitro* or *ex vivo* transfer of an oligonucleotide, comprising contacting an oligonucleotide and an oligomeric conjugate according to claim 1 with a medium containing cells, wherein:

an antisense oligonucleotide is transferred into a cytosol and/or ~~[[the]]~~ a cell nucleus where it binds ~~and blocks the complementary mRNA sequence;~~

an oligonucleotide is transferred into a cytosol where it depresses or activates a second messenger in a cytosol, or ~~the corresponding gene in the nucleus~~ a corresponding gene of a second messenger in the nucleus;

oligonucleotides corresponding to a repetitive bacterial type DNA sequence with ~~stimulating or immunodepressive~~ immunostimulating activity;

an oligonucleotide is transferred into the cell nucleus where it binds to DNA and forms a triple helix leading to ~~[[the]]~~ inhibition of gene expression;

oligonucleotides which inhibit gene expression are transferred into a cytosol and/or cell nucleus ~~which inhibit gene expression~~ by blocking the binding of regulatory factors to ~~[[the]]~~ a specific DNA region; or

ribozymes (RNA oligonucleotides) which inhibit gene expression by cleaving ~~[[the]]~~ mRNA are transferred into a cytosol, and/or cell nucleus.

15-16. (canceled without prejudice)

17. (previously presented) A pharmaceutical composition, comprising as an active substance, an oligomeric conjugate according to claim 1, in association with a pharmaceutically acceptable vehicle.

18. (canceled without prejudice)

19. (currently amended) A kit or case comprising:

a) an oligomeric conjugate according to claim 1, ~~substituted by protonable residues, said residues being protonated in a weak acid medium, said protonation leading to destabilization of cellular membranes said oligomeric conjugate being able to comprise a recognition signal, which is previously fixed or not on said conjugate, wherein said recognition signal is a ligand for a cell membrane receptor~~

b) at least one biological molecule to transfer, and

c) ~~optionally~~ reagents enabling the ~~possible binding of the recognition signal on the above-said oligomeric conjugate,~~ and transfer of the biological molecules to be transferred inside the cell.

~~d) reagents enabling the transfer of the biological molecule in the cytosol and/or the cell nucleus.~~



REMARKS

This application has been amended in a manner that is believed to place it in condition for allowance at the time of the next Official Action. Claims 1-14, 17, 19 have been amended to more particularly point and distinctly claim the present invention. Claims 15, 16, and 18 have been canceled.

In the outstanding Official Action, the specification was objected to because it allegedly contained grammatical and spelling errors.

It is believed that the present amendment obviates this objection. The specification has been amended to correct misspellings and grammatical errors. Applicants would like to thank the Examiner for his suggestion as to how to overcome these objections.

Claim 5 was objected to because it allegedly contained unnecessary carriage returns. In the interest of advancing prosecution, claim 5 has been amended to remove these carriage returns.

Claims 6 and 7 were objected to because the purpose of the asterisk immediately following the term "Flu being a fluorescent molecule" was unclear to the Examiner. Moreover, the outstanding Official Action objected to the claims for reciting "=" and "is" interchangeably. Claim 6 was further objected to for the term "Wherein" and stated that the term was

improperly capitalized. Claims 6 and 7 have been amended to correct these informalities. Applicants respectfully request that the objection be withdrawn.

Claim 19 was objected to for allegedly misspelling "destabilization" and not providing a comma after "cellular membranes". These terms have been removed from claim 19. Thus, applicants believe that the present amendment obviates this objection.

Claims 9-13, 17, and 19 were objected to because they allegedly embraced non-elected subject matter. The outstanding Official Action stated that the claims recited compositions comprising biological molecules other than oligonucleotides, and methods of delivering biological molecules other than oligonucleotides. Applicants believe the present amendment obviates this objection.

Claims 9-13, 17, and 19 have been amended so this non-elected subject matter is no longer recited in the claims and may be the subject of a future application.

Claims 1-14, 17, and 19 were rejected under 35 USC §112, second paragraph, for allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which applicants regard as the invention. It is believed the present amendment obviates this rejection.

Claims 1-14, 17, and 19 were rejected for allegedly being indefinite for reciting the term "substituted". The outstanding Official Action alleged that several meanings could be given to this term.

In the interest of advancing prosecution, the phrase "formed from monomeric components having free  $\text{NH}_3^+$  in a number equal" has been deleted and the phrase "formed from monomeric components having initially free  $\text{NH}_3^+$  in a number equal" has been inserted. This recitation is supported in the present specification at page 4, lines 7-9.

The present invention is related to an oligomer in which more than 50% of the  $\text{NH}_3^+$  moieties of monomers are substituted with molecules inducing a membrane destabilization at acidic pH (page 4, lines 18-22). The substitution of those functions is made possible only if they are initially free. Thus, in view of the present amendment, it is believed that claims 1-14, 17, and 19 are definite to one of ordinary skill in the art.

In the outstanding Official Action, claim 2 is rejected for reciting the phrase "wherein the protonable residues leading to a destabilization of cellular membranes wherein said protonable residues have a pK in aqueous medium lower than 8.0". The phrase "wherein said protonable residues"

has been deleted. The Examiner's suggestion as how to overcome this rejection is greatly appreciated.

The outstanding Official Action also alleged that claim 6 was indefinite for reciting the term "i". The outstanding Official Action stated that the structure of the claim contained no character "i" but only "ai", "bi", and "i-2". Applicants traverse this rejection.

Applicants note that "i-2" should be read as "i minus 2". "i" is a degree of polymerization ranging from 5 to 36 (see claim 6 and page 9, lines 10-24). As the formulas in claims 6 and 7 display three units of monomers, the value of i has to be deducted by an amount of two for taking into account the presence of the two additional monomers. Thus, it is believed that claim 6 is definite to one of ordinary skill in the art.

Claims 6 and 7 were then further rejected for allegedly being indefinite for stating that R represents certain structures in certain ratios, but do not clearly define the ratios. Beginning on the bottom of page 5, the Examiner provided several suggestions as how to overcome this rejection. Applicants would like to thank the Examiner for his suggestions and have amended the claims accordingly. Thus, it is believed the present amendment overcomes this rejection.

The outstanding Official Action also rejected claims 6-9 as allegedly being indefinite. The outstanding Official

Action alleged that the metes and bounds of the structures of the claimed oligomeric conjugates were unclear. It is believed that the present amendment obviates this rejection.

The claims have been amended to recite Markush groups for the structures. Moreover, applicants note that R' may be a substituent present on a residue being a group R which corresponds to the total number of "u" of group R substituting a monomeric subunit of the polymer (see claim 6). Indeed, R' may be simultaneously  $\text{NH}_3^+$  (corresponding to a number p) and NH substituted (corresponding to a number p). This is apparent in that the number "u" is equal to "p+q" (see claim 6 and page 11, line 21).

The outstanding Official Action also alleged that claims 6-9 were indefinite because the arithmetic functions recited at the end of claim 7 were not valid for all embraced values of the recited variables. It is believed the present amendment obviates this rejection.

The variable "u" is an absolute number and not a percentage. Indeed, the claims have been amended to more particularly point and distinctly claim this feature. Thus, it is believed that claims 6-9 are definite to one of ordinary skill in the art.

In the outstanding Official Action, claim 14 was rejected for containing several informalities. Claim 14 has

been amended to more particularly point and distinctly claim the present invention. These informalities cited by the Examiner have been deleted and it is believed that claim 14 is definite to one of ordinary skill in the art.

Claim 19 has also been amended to more particularly point out and distinctly claim the present invention. The outstanding Official Action rejected claim 19 on the grounds that it was allegedly unclear what group or groups should be substituted in the claim. Claim 19 has been amended to recite a kit or case comprising an oligomeric conjugate according to claim 1, at least one biological molecule to transfer, and reagents enabling the transfer of the biological molecule in the cytosol and/or the cell nucleus. Thus, it is believed that claim 19 is definite to one of ordinary skill in the art.

In view of the present amendment and the foregoing remarks, therefore, it is believed that this application is now in condition for allowance, with claims 1-14, 17, and 19, as presented. Allowance and passage to issue on that basis are accordingly respectfully requested.

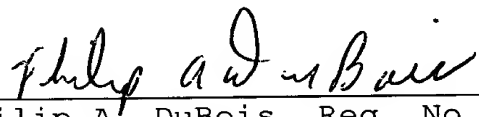
The Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any

Application No. 09/857,448  
Amdt. Dated October 15, 2003  
Reply to Office Action of July 15, 2003  
Docket No. 0508-1073

overpayment to Deposit Account No. 25-0120 for any additional  
fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17.

Respectfully submitted,

YOUNG & THOMPSON

  
Philip A. DuBois, Reg. No. 50,696  
745 South 23<sup>rd</sup> Street  
Arlington, VA 22202  
Telephone (703) 521-2297  
Telefax (703) 685-0573  
(703) 979-4709

PD/lrs